

SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> POLYNUCLEOTIDES ENCODING A NOVEL GLYCINE RECEPTOR ALPHA SUBUNIT EXPRESSED IN THE GASTROINTESTINAL TRACT, HGRA4, and SPLICE VARIANT THEREOF

<130> D0079 NP

<150> US 60/269,535

<151> 2001-02-16

<160> 81

<170> PatentIn version 3.0

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<211> 2565

<212> DNA

<213> homo sapiens

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Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro	
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Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
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Arg Asp Glu Lys Asp Leu Gly Cys Cys Thr Lys His Tyr Asn Thr Gly
 225 230 235 240

Lys Phe Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg Gln Met Gly
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Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly
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Ser Arg Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile
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Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr
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Ala Ala Ile Asn Phe Val Ser Arg Gln His Lys Glu Phe Ile Arg Leu
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 Lys Ser Gly Thr Lys Gly Ser Gln Pro Met Ser Pro Ser Asp Phe Leu
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 Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro
 50 55 60
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 Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
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 Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp Tyr Arg Val Asn Val
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 ttc ttg cgg caa cag tgg aat gac cca cgc ctg tcc tac cga gaa tat 336
 Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr
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 Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
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 Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Glu
 130 135 140
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 Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe Lys Asn Gly Asn Val

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gct gtg tgt ctg ctc ttt gtg ttc gct gcc ttg ctg gag tat gct gcc Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr Ala Ala 340	345		350	1056
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Gly Gly Pro Met Glu Gly Ser Gly Ile Tyr Ser Pro Gln Pro Pro Ala
                      405                      410                      415

cct ctt cta agg gaa gga gaa acc acg cgg aaa ctc tac gtg gac      1293
Pro Leu Leu Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
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Ser Ser Ile Leu Cys Ser Pro Leu Pro Ser Leu Ser Leu Ser Val Gly
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Tyr Thr Met Lys Asp Leu Val Phe Glu Trp Leu Glu Asp Ala Pro Ala
210 215 220
Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Ile Leu Arg Asp
225 230 235 240
Glu Lys Asp Leu Gly Cys Cys Thr Lys His Tyr Asn Thr Gly Lys Phe
245 250 255
Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg Gln Met Gly Tyr Tyr
260 265 270
Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu Ser Trp
275 280 285
Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val Gly Leu
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330

335

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Asn Asp Pro Arg Leu Ala Tyr Asn Glu Tyr Pro Asp Asp Ser Leu Asp
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Ala Asn Glu Lys Gly Ala His Phe His Glu Ile Thr Thr Asp Asn Lys
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 Lys Ile Ser Arg Ile Gly Phe Pro Met Ala Phe Leu Ile Phe Asn Met
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 Phe Tyr Trp Ile Ile Tyr Lys Ile Val Arg Arg Glu Asp Val His Asn
 435 440 445
 Gln

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 <213> Homo sapiens
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Met Ala His Val Arg His Phe Arg Thr Leu Val Ser Gly Phe Tyr Phe
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 Trp Glu Ala Ala Leu Leu Leu Ser Leu Val Ala Thr Lys Glu Thr Asp
 20 25 30
 Ser Ala Arg Ser Arg Ser Ala Pro Met Ser Pro Ser Asp Phe Leu Asp
 35 40 45
 Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro Asn
 50 55 60
 Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn Ser
 65 70 75 80
 Phe Gly Ser Ile Ala Glu Thr Thr Met Asp Tyr Arg Val Asn Ile Phe
 85 90 95
 Leu Arg Gln Lys Trp Asn Asp Pro Arg Leu Ala Tyr Ser Glu Tyr Pro
 100 105 110
 Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp Lys
 115 120 125
 Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Glu Val
 130 135 140
 Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe Lys Asn Gly Asn Val Leu
 145 150 155 160
 Tyr Ser Ile Arg Leu Thr Leu Thr Leu Ser Cys Pro Met Asp Leu Lys
 165 170 175
 Asn Phe Pro Met Asp Val Gln Thr Cys Ile Met Gln Leu Glu Ser Phe
 180 185 190
 Gly Tyr Thr Met Asn Asp Leu Ile Phe Glu Trp Gln Asp Glu Ala Pro
 195 200 205
 Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Leu Leu Lys Glu
 210 215 220
 Glu Lys Asp Leu Arg Tyr Cys Thr Lys His Tyr Asn Thr Gly Lys Phe
 225 230 235 240
 Thr Cys Ile Glu Val Arg Phe His Leu Glu Arg Gln Met Gly Tyr Tyr
 245 250 255
 Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu Ser Trp
 260 265 270
 Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val Ala Leu
 275 280 285
 Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly Ser Arg
 290 295 300

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Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile Trp Met
305                      310                      315                      320

Ala Val Cys Leu Leu Phe Val Phe Ser Ala Leu Leu Glu Tyr Ala Ala
                      325                      330                      335

Val Asn Phe Val Ser Arg Gln His Lys Glu Leu Leu Arg Phe Arg Arg
                      340                      345                      350

Lys Arg Lys Asn Lys Thr Glu Ala Phe Ala Leu Glu Lys Phe Tyr Arg
                      355                      360                      365

Phe Ser Asp Met Asp Asp Glu Val Arg Glu Ser Arg Phe Ser Phe Thr
                      370                      375                      380

Ala Tyr Gly Met Gly Pro Cys Leu Gln Ala Lys Asp Gly Met Thr Pro
385                      390                      395                      400

Lys Gly Pro Asn His Pro Val Gln Val Met Pro Lys Ser Pro Asp Glu
                      405                      410                      415

Met Arg Lys Val Phe Ile Asp Arg Ala Lys Lys Ile Asp Thr Ile Ser
                      420                      425                      430

Arg Ala Cys Phe Pro Leu Ala Phe Leu Ile Phe Asn Ile Phe Tyr Trp
                      435                      440                      445

Val Ile Tyr Lys Ile Leu Arg His Glu Asp Ile His His Gln Gln Gln
450                      455                      460

Asp
465

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<212> PRT
<213> Mus musculus

<220>
<221> UNSURE
<222> (322)..(322)
<223> wherein "X" is any amino acid.

<400> 12

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Pro Met Ser Pro Ser Asp Phe Leu Asp Lys Leu Met Gly Arg Thr Ser
                      20                      25                      30

Gly Tyr Asp Ala Arg Ile Arg Pro Asn Phe Lys Gly Pro Pro Val Asn
                      35                      40                      45

Val Thr Cys Asn Ile Phe Ile Asn Ser Phe Gly Ser Val Thr Glu Thr

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50

55

60

Thr Met Asp Tyr Arg Val Asn Val Phe Leu Arg Gln Gln Trp Asn Asp
65 70 75 80

Pro Arg Leu Ala Tyr Arg Glu Tyr Pro Asp Asp Ser Leu Asp Leu Asp
85 90 95

Pro Ser Met Leu Asp Ser Ile Trp Lys Pro Asp Leu Phe Phe Ala Asn
100 105 110

Glu Lys Gly Ala Asn Phe His Glu Val Thr Thr Asp Asn Lys Leu Leu
115 120 125

Arg Ile Phe Lys Asn Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu
130 135 140

Ile Leu Ser Cys Pro Met Asp Leu Lys Asn Phe Pro Met Asp Ile Gln
145 150 155 160

Thr Cys Thr Met Gln Leu Glu Ser Phe Gly Tyr Thr Met Asn Asp Leu
165 170 175

Met Phe Glu Trp Leu Glu Asp Ala Pro Ala Val Gln Val Ala Glu Gly
180 185 190

Leu Thr Leu Pro Gln Phe Ile Leu Arg Asp Glu Lys Asp Leu Gly Tyr
195 200 205

Cys Thr Lys His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu Val Lys
210 215 220

Phe His Leu Glu Arg Gln Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile
225 230 235 240

Pro Ser Leu Leu Ile Val Ile Leu Ser Trp Val Ser Phe Trp Ile Asn
245 250 255

Met Asp Ala Ala Pro Ala Arg Val Gly Leu Gly Ile Thr Thr Val Leu
260 265 270

Thr Met Thr Thr Gln Ser Ser Gly Ser Arg Ala Ser Leu Pro Lys Val
275 280 285

Ser Tyr Val Lys Ala Ile Asp Ile Trp Met Ala Val Cys Leu Leu Phe
290 295 300

Val Phe Ala Ala Leu Leu Glu Tyr Ala Ala Val Asn Phe Val Ser Arg
305 310 315 320

Gln Xaa Lys Glu Phe Met Arg Leu Arg Arg Arg Gln Arg Arg Gln Arg
325 330 335

Met

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<211> 452
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 <213> Homo sapiens

<400> 13

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Leu Glu Thr Asn His Phe Arg Thr Ala Phe Cys Lys Asp His Asp Ser
      20      25      30
Arg Ser Gly Lys Gln Pro Ser Gln Thr Leu Ser Pro Ser Asp Phe Leu
      35      40      45
Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro
      50      55      60
Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
      65      70      75      80
Ser Phe Gly Ser Val Thr Glu Thr Thr Met Asp Tyr Arg Val Asn Ile
      85      90      95
Phe Leu Arg Gln Gln Trp Asn Asp Ser Arg Leu Ala Tyr Ser Glu Tyr
      100      105      110
Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
      115      120      125
Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Asp
      130      135      140
Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Ser Lys Asn Gly Lys Val
      145      150      155      160
Leu Tyr Ser Ile Arg Leu Thr Leu Thr Leu Ser Cys Pro Met Asp Leu
      165      170      175
Lys Asn Phe Pro Met Asp Val Gln Thr Cys Thr Met Gln Leu Glu Ser
      180      185      190
Phe Gly Tyr Thr Met Asn Asp Leu Ile Phe Glu Trp Leu Ser Asp Gly
      195      200      205
Pro Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Ile Leu Lys
      210      215      220
Glu Glu Lys Glu Leu Gly Tyr Cys Thr Lys His Tyr Asn Thr Gly Lys
      225      230      235      240
Phe Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg Gln Met Gly Tyr
      245      250      255
Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu Ser
      260      265      270

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Trp Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val Ala
 275 280 285
 Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly Ser
 290 295 300
 Arg Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile Trp
 305 310 315 320
 Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr Ala
 325 330 335
 Ala Val Asn Phe Val Ser Arg Gln His Lys Glu Phe Leu Arg Leu Arg
 340 345 350
 Arg Arg Gln Lys Arg Gln Asn Lys Glu Glu Asp Val Thr Arg Glu Ser
 355 360 365
 Arg Phe Asn Phe Ser Gly Tyr Gly Met Gly His Cys Leu Gln Val Lys
 370 375 380
 Asp Gly Thr Ala Val Lys Ala Thr Pro Ala Asn Pro Leu Pro Gln Pro
 385 390 395 400
 Pro Lys Asp Gly Asp Ala Ile Lys Lys Lys Phe Val Asp Arg Ala Lys
 405 410 415
 Arg Ile Asp Thr Ile Ser Arg Ala Ala Phe Pro Leu Ala Phe Leu Ile
 420 425 430
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 Val His Lys Lys
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 20 25 30
 Asn Ile Phe Ile Asn Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp
 35 40 45
 Tyr Arg Val Asn Val Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu
 50 55 60
 Ser Tyr Arg Glu Tyr Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met
 65 70 75 80

Leu Asp Ser Ile Trp Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly
 85 90 95
 Ala Asn Phe His Glu Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe
 100 105 110
 Lys Asn Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu Ser
 115 120 125
 Cys Leu Met Asp Leu Lys Asn Phe Pro Met Asp Ile Glu Thr Cys Thr
 130 135 140
 Met Glu Leu Glu Ser Phe Gly Tyr Thr Met Lys Asp Leu Val Phe Glu
 145 150 155 160
 Trp Leu Glu Asp Ala Pro Ala Val Gln Val Ala Glu Gly Leu Thr Leu
 165 170 175
 Pro Gln Phe Ile Leu Arg Asp Glu Lys Asp Leu Gly Cys Cys Thr Lys
 180 185 190
 His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu Val Lys Phe His Leu
 195 200 205
 Glu Arg Gln Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu
 210 215 220
 Leu Ile Val Ile Leu Ser Trp Val Ser Phe Trp Ile Asn Met Asp Ala
 225 230 235 240
 Ala Pro Ala Arg Val Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr
 245 250 255
 Thr Gln Ser Ser Gly Ser Arg Ala Ser Leu Pro Lys Val Ser Tyr Val
 260 265 270
 Lys Ala Ile Asp Ile Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala
 275 280 285
 Ala Leu Leu Glu Tyr Ala Ala Ile Asn Phe
 290 295

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 <213> homo sapiens

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Pro Ser Asp Phe Leu Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp
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 Ala Arg Ile Arg Pro Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys
 20 25 30
 Asn Ile Phe Ile Asn Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp

35					40					45					
Tyr	Arg	Val	Asn	Val	Phe	Leu	Arg	Gln	Gln	Trp	Asn	Asp	Pro	Arg	Leu
50						55					60				
Ser	Tyr	Arg	Glu	Tyr	Pro	Asp	Asp	Ser	Leu	Asp	Leu	Asp	Pro	Ser	Met
65					70				75						80
Leu	Asp	Ser	Ile	Trp	Lys	Pro	Asp	Leu	Phe	Phe	Ala	Asn	Glu	Lys	Gly
			85						90					95	
Ala	Asn	Phe	His	Glu	Val	Thr	Thr	Asp	Asn	Lys	Leu	Leu	Arg	Ile	Phe
			100					105					110		
Lys	Asn	Gly	Asn	Val	Leu	Tyr	Ser	Ile	Arg	Leu	Thr	Leu	Ile	Leu	Ser
	115						120					125			
Cys	Leu	Met	Asp	Leu	Lys	Asn	Phe	Pro	Met	Asp	Ile	Gln	Thr	Cys	Thr
	130					135					140				
Met	Gln	Leu	Glu	Ser	Ser	Ser	Ile	Leu	Cys	Ser	Pro	Leu	Pro	Ser	Leu
145					150					155					160
Ser	Leu	Ser	Val	Gly	Tyr	Thr	Met	Lys	Asp	Leu	Val	Phe	Glu	Trp	Leu
			165						170					175	
Glu	Asp	Ala	Pro	Ala	Val	Gln	Val	Ala	Glu	Gly	Leu	Thr	Leu	Pro	Gln
			180					185					190		
Phe	Ile	Leu	Arg	Asp	Glu	Lys	Asp	Leu	Gly	Cys	Cys	Thr	Lys	His	Tyr
	195						200					205			
Asn	Thr	Gly	Lys	Phe	Thr	Cys	Ile	Glu	Val	Lys	Phe	His	Leu	Glu	Arg
	210					215					220				
Gln	Met	Gly	Tyr	Tyr	Leu	Ile	Gln	Met	Tyr	Ile	Pro	Ser	Leu	Leu	Ile
225					230					235					240
Val	Ile	Leu	Ser	Trp	Val	Ser	Phe	Trp	Ile	Asn	Met	Asp	Ala	Ala	Pro
			245						250					255	
Ala	Arg	Val	Gly	Leu	Gly	Ile	Thr	Thr	Val	Leu	Thr	Met	Thr	Thr	Gln
			260					265					270		
Ser	Ser	Gly	Ser	Arg	Ala	Ser	Leu	Pro	Lys	Val	Ser	Tyr	Val	Lys	Ala
		275					280					285			
Ile	Asp	Ile	Trp	Met	Ala	Val	Cys	Leu	Leu	Phe	Val	Phe	Ala	Ala	Leu
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Leu	Glu	Tyr	Ala	Ala	Ile	Asn	Phe								
305					310										

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Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr Pro Asp Asp
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<212> PRT

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<400> 17

Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu
1 5 10

<210> 18

<211> 13

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<213> homo sapiens

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Glu Ser Phe Gly Tyr Thr Met Lys Asp Leu Val Phe Glu
1 5 10

<210> 19

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<213> homo sapiens

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Thr Lys His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu
1 5 10

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Leu Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
1 5 10

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<211> 12

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<400> 21

Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
1 5 10

<210> 22

<211> 14
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Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
1 5 10

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<211> 27
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Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val
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Ile Leu Ser Trp Val Ser Phe Trp Ile Asn Met
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<211> 18
<212> PRT
<213> homo sapiens
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Val Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser
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Gly Ser

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Ile Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu
1 5 10 15

Tyr Ala Ala Ile Asn Phe Val Ser
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1 5 10 15

Ile Leu Ser Trp Val Ser Phe Trp Ile Asn Met
20 25

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Val Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser
1 5 10 15

Gly Ser

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Ile Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu
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Tyr Ala Ala Ile Asn Phe Val Ser
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Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
1 5 10

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Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr Pro Asp Asp
1 5 10

<210> 31
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<400> 31

Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu
1 5 10

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<211> 13
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<213> homo sapiens

<400> 32

Leu Ser Val Gly Tyr Thr Met Lys Asp Leu Val Phe Glu
1 5 10

<210> 33
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<400> 33

Thr Lys His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu
1 5 10

<210> 34
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<400> 34

Leu Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
1 5 10

<210> 35
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<400> 36

Asp Tyr Lys Asp Asp Asp Lys
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<210> 37
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aatcagaggg tgcaccgtca gtcttctctt tcccccaaaa acccaaggac accctcatga      120
tctcccgga tcttgaggtc acatgcgtgg tggcggacgt aagccacgaa gaccctgagg      180
tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg      240
aggagcagta caacagcacg tacgtgtgg tcagcgtcct caccgtcctg caccaggact      300
ggctgaatgg caaggagtac aagtgcagg tctccaacaa agccctccca acccccatcg      360
agaaaaccat ctcaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc      420
catcccgga tgagctgacc aagaaccagg tcagcctgac ctgcctgggc aaaggcttct      480
atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagAAC aactacaaga      540
ccacgcctcc cgtgctggac tccgacggct ccttcttctt ctacagcaag ctaccgtgg      600
acaagagcag gtggcagcag gggaaagtct tctcatgctc cgtgatgcat gaggctctgc      660
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gaaacgacac tcacgcagtc tcc

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23

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21

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<400> 76
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<210> 77
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<210> 78
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39

<210> 79
<211> 35
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